2009

Nebraska Summary: S745 Massey Ferguson 8670 IEGR

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SUMMARY OF OECD TEST 2558–NEBRASKA SUMMARY 745
MASSEY FERGUSON 8670 IEGR DIESEL
DYNA VT TRANSMISSION

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1081 rpm)					
254.0 *(189.4)*	2200	15.67 *(59.32)*	0.431 *(0.262)*	16.21 *(3.19)*	
Standard Power Take-off Speed(1000 rpm)					
275.8 *(205.7)*	2035	15.88 *(60.11)*	0.403 *(0.245)*	17.37 *(3.42)*	
Maximum Power (1 hour)					
288.2 *(214.9)*	1850	15.88 *(60.11)*	0.385 *(0.234)*	18.15 *(3.58)*	
VARYING POWER AND FUEL CONSUMPTION					
254.0 *(189.4)*	2200	15.67 *(59.32)*	0.431 *(0.262)*	16.21 *(3.19)*	Air temperature
218.1 *(162.6)*	2222	14.25 *(53.94)*	0.457 *(0.278)*	15.30 *(3.01)*	68°F *(20°C)*
164.3 *(122.5)*	2231	11.39 *(43.10)*	0.485 *(0.295)*	14.42 *(2.84)*	Relative humidity
110.0 *(82.0)*	2242	8.31 *(31.45)*	0.527 *(0.321)*	13.23 *(2.61)*	43%
55.3 *(41.2)*	2249	5.33 *(20.16)*	0.675 *(0.410)*	10.37 *(2.04)*	Barometer
-- --	2258	2.90 *(10.96)*	-- --	-- --	29.4" Hg *(99.7 kPa)*

Maximum Torque - 951 lb.-ft. *(1289 Nm)* at 1500 rpm
Maximum Torque Rise - 56.8%
Torque rise at 1800 engine rpm - 37%
Power increase at 1850 engine rpm - 13.5%

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F cool-ing med	Temp. *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Turtle 7.5									
213.6 *(159.3)*	17005 *(75.65)*	4.71 *(7.58)*	2200	2.5	0.512 *(0.312)*	13.64 *(2.69)*	171 *(77)*	59 *(15)*	29.3 *(99.2)*
75% of Pull at Maximum Power—Turtle 7.5									
164.3 *(122.5)*	12755 *(56.73)*	4.83 *(7.78)*	2219	1.8	0.562 *(0.342)*	12.44 *(2.45)*	169 *(76)*	57 *(14)*	29.3 *(99.2)*
50% of Pull at Maximum Power—Turtle 7.5									
111.0 *(82.8)*	8475 *(37.70)*	4.91 *(7.91)*	2232	1.3	0.616 *(0.375)*	11.34 *(2.24)*	153 *(67)*	57 *(14)*	29.3 *(99.2)*
75% of Pull at Reduced Engine Speed—Turtle 9									
164.7 *(122.8)*	12745 *(56.70)*	4.85 *(7.80)*	1902	1.9	0.492 *(0.299)*	14.21 *(2.80)*	169 *(76)*	57 *(14)*	29.3 *(99.2)*
50% of Pull at Reduced Engine Speed—Turtle 9									
112.0 *(83.5)*	8520 *(37.93)*	4.93 *(7.93)*	1907	1.5	0.510 *(0.310)*	13.71 *(2.70)*	167 *(75)*	57 *(14)*	29.3 *(99.2)*

Location of tests: DLG - Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: October 2009 - March 2010.

Manufacturer: AGCO S.A. ZA n2 BP 60307, Avenue Blaise Pascal, 60026 Beauvais , France

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.839 **Fuel weight** 6.99 lbs/gal *(0.8373 kg/l)* **Oil SAE** 10W40 **API service classification** CI4 **Transmission and hydraulic lubricant** BP STOU 10W/40 **Front axle lubricant** SAE 85W90 API GL5

ENGINE: Make Sisu Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and IEGR technology **Serial No.** 21340 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.370" x 5.709" *(111.0 mm x 145.0 mm)* **Compression ratio** 16.7 to 1 **Displacement** 513 cu in *(8419 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist with duals **Serial No.** T073991 **Tread width** rear 60.0" *(1525 mm)* to 101.8" *(2585 mm)* front 60.8" *(1545 mm)* to 89.2" *(2265 mm)* **Wheelbase** 122.2" *(3105 mm)* **Hydraulic control system** direct engine drive **Transmission** CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. **Nominal travel speeds mph *(km/h)*** forward: Low range 0-18 *(0-30)*, high range 0-25 *(0-40)* reverse: Low range 0-12 *(0-19)*, high range 0-12*(0-19)* **Clutch** a foot pedal controls the hydrostatic oil flow **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2038 engine rpm or 1000 rpm at 2033 engine rpm **Unladen tractor mass** 25840 lb *(11720 kg)*

DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)
MAXIMUM POWER AT SELECTED SPEEDS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					Turtle 6				
207.6 *(154.8)*	26605 *(118.35)*	2.93 *(4.71)*	1981	14.9	0.536 *(0.326)*	13.05 *(2.57)*	165 *(74)*	57 *(14)*	29.3 *(99.3)*
					Turtle 7.5				
239.8 *(178.8)*	23415 *(104.16)*	3.84 *(6.18)*	1851	4.9	0.465 *(0.283)*	15.02 *(2.96)*	162 *(72)*	55 *(13)*	29.3 *(99.3)*
					Turtle 9				
242.7 *(181.0)*	20005 *(88.99)*	4.55 *(7.32)*	1850	3.2	0.460 *(0.280)*	15.18 *(2.99)*	163 *(73)*	55 *(13)*	29.3 *(99.3)*
					Turtle 11				
241.0 *(179.7)*	15815 *(70.36)*	5.71 *(9.20)*	1850	2.3	0.462 *(0.281)*	15.13 *(2.98)*	160 *(71)*	55 *(13)*	29.3 *(99.3)*
					Turtle 13				
239.5 *(178.6)*	13745 *(61.14)*	6.54 *(10.52)*	1851	1.8	0.465 *(0.283)*	15.02 *(2.96)*	163 *(73)*	55 *(13)*	29.3 *(99.3)*
					Turtle 15				
234.0 *(174.5)*	11245 *(50.02)*	7.80 *(12.56)*	1850	1.5	0.477 *(0.290)*	14.63 *(2.88)*	165 *(74)*	55 *(13)*	29.3 *(99.3)*
					Turtle 17				
233.5 *(174.1)*	10215 *(45.44)*	8.57 *(13.79)*	1853	1.4	0.479 *(0.291)*	14.58 *(2.87)*	167 *(75)*	55 *(13)*	29.3 *(99.3)*
					Rabbit 11				
232.1 *(173.1)*	15765 *(70.13)*	5.52 *(8.89)*	1851	2.3	0.480 *(0.292)*	14.57 *(2.87)*	165 *(74)*	57 *(14)*	29.3 *(99.3)*
					Rabbit 13				
236.7 *(176.5)*	13305 *(59.17)*	6.67 *(10.74)*	1852	1.7	0.470 *(0.286)*	14.87 *(2.93)*	167 *(75)*	57 *(14)*	29.3 *(99.3)*
					Rabbit 15				
237.8 *(177.3)*	11365 *(50.56)*	7.84 *(12.62)*	1854	1.5	0.469 *(0.285)*	14.92 *(2.94)*	169 *(76)*	57 *(14)*	29.3 *(99.3)*
					Rabbit 17				
236.7 *(176.5)*	10215 *(45.43)*	8.69 *(13.98)*	1852	1.4	0.470 *(0.286)*	14.87 *(2.93)*	171 *(77)*	57 *(14)*	29.3 *(99.3)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE : The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 8680 with the Massey Ferguson 8670 module.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claims of 15% power bulge nor remote hydraulic flow of 26.4 GPM *(100 l/min)* from one outlet set. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2558**, Nebraska summary 745, October 26, 2010.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
J.A. Smith
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	**dB(A)**
At no load in Turtle - 4.6 mph *(7.5 km/h)* - no load	71.0
Bystander	---

TIRES, BALLAST AND WEIGHT	**With Ballast**	**Without Ballast**
Rear Tires - No., size, ply & psi*(kPa)*	Six 480/80R46;***;9*(60)*	Four 480/80R46;***;9*(60)*
Ballast - Triples (total)	2955 lb *(1340 kg)*	None
- Cast Iron (total)	750 lb *(340 kg)*	None
Front Tires - No., size, ply & psi*(kPa)*	Four 420/90R30;**;9*(60)*	Two 420/90R30;**;9*(60)*
Ballast - Duals (total)	1170 lb *(530 kg)*	None
- Cast Iron (total)	1410 lb *(640 kg)*	None
Height of Drawbar	19.5 in *(500 mm)*	19.5 in *(500 mm)*
Static Weight with operator - Rear	18805 lb *(8530 kg)*	15320 lb *(6950 kg)*
- Front	13480 lb *(6115 kg)*	10680 lb *(4845 kg)*
- Total	32285 lb*(14645 kg)*	26000 lb*(11795 kg)*

DRAWBAR PERFORMANCE

(Ballasted - Front Drive Engaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—Turtle 7.5									
223.3 *(166.5)*	18080 *(80.42)*	4.63 *(7.45)*	2200	1.8	0.497 *(0.302)*	14.07 *(2.77)*	149 *(65)*	55 *(13)*	29.6 *(100.3)*
75% of Pull at Maximum Power—Turtle 7.5									
170.0 *(126.8)*	13515 *(60.13)*	4.72 *(7.59)*	2221	1.4	0.539 *(0.328)*	12.99 *(2.56)*	151 *(66)*	55 *(13)*	29.6 *(100.3)*
50% of Pull at Maximum Power—Turtle 7.5									
115.3 *(86.0)*	9005 *(40.06)*	4.80 *(7.73)*	2232	0.7	0.592 *(0.360)*	11.83 *(2.33)*	151 *(66)*	55 *(13)*	29.6 *(100.3)*
75% of Pull at Reduced Engine Speed—Turtle 9									
170.8 *(127.4)*	13550 *(60.27)*	4.73 *(7.61)*	1832	1.0	0.467 *(0.284)*	14.97 *(2.95)*	149 *(65)*	55 *(13)*	29.6 *(100.3)*
50% of Pull at Reduced Engine Speed—Turtle 9									
115.7 *(86.3)*	9040 *(40.22)*	4.80 *(7.72)*	1840	0.6	0.495 *(0.301)*	14.12 *(2.78)*	151 *(66)*	55 *(13)*	29.6 *(100.3)*
MAXIMUM POWER AT SELECTED SPEEDS									
					Turtle 6				
215.1 *(160.4)*	30335 *(134.93)*	2.66 *(4.28)*	1857	15.1	0.518 *(0.315)*	13.50 *(2.66)*	158 *(70)*	55 *(13)*	29.3 *(99.2)*
					Turtle 7.5				
248.0 *(184.9)*	24255 *(107.89)*	3.83 *(6.17)*	1851	3.2	0.450 *(0.274)*	15.53 *(3.06)*	160 *(71)*	57 *(14)*	29.3 *(99.2)*
					Turtle 9				
248.8 *(185.5)*	20220 *(89.95)*	4.61 *(7.42)*	1850	2.1	0.447 *(0.272)*	15.63 *(3.08)*	161 *(72)*	55 *(13)*	29.3 *(99.2)*
					Turtle 11				
246.5 *(183.8)*	16660 *(74.10)*	5.55 *(8.93)*	1851	1.5	0.452 *(0.275)*	15.48 *(3.05)*	160 *(71)*	55 *(13)*	29.3 *(99.2)*
					Turtle 13				
245.1 *(182.8)*	14075 *(62.60)*	6.53 *(10.51)*	1852	1.3	0.455 *(0.276)*	15.39 *(3.03)*	162 *(72)*	54 *(12)*	29.3 *(99.2)*
					Turtle 15				
240.4 *(179.3)*	11790 *(52.44)*	7.65 *(12.31)*	1852	1.0	0.462 *(0.281)*	15.13 *(2.98)*	162 *(72)*	54 *(12)*	29.3 *(99.2)*
					Turtle 17				
235.2 *(175.4)*	10265 *(45.67)*	8.59 *(13.83)*	1855	0.8	0.473 *(0.288)*	14.77 *(2.91)*	162 *(72)*	54 *(12)*	29.3 *(99.2)*
					Rabbit 11				
241.2 *(179.9)*	16590 *(73.79)*	5.45 *(8.78)*	1851	1.6	0.461 *(0.280)*	15.18 *(2.99)*	154 *(68)*	48 *(9)*	29.6 *(100.1)*
					Rabbit 13				
244.0 *(182.0)*	14075 *(62.60)*	6.50 *(10.47)*	1852	1.4	0.455 *(0.277)*	15.38 *(3.03)*	156 *(69)*	48 *(9)*	29.6 *(100.1)*
					Rabbit 15				
243.5 *(181.6)*	11695 *(52.01)*	7.81 *(12.57)*	1855	0.9	0.456 *(0.278)*	15.33 *(3.02)*	149 *(65)*	48 *(9)*	29.6 *(100.3)*
					Rabbit 17				
242.2 *(180.6)*	10315 *(45.89)*	8.81 *(14.17)*	1854	0.7	0.459 *(0.279)*	15.23 *(3.00)*	151 *(66)*	48 *(9)*	29.6 *(100.2)*

HYDRAULIC PERFORMANCE

CATEGORY: IVN	
Quick Attach: No	
OECD Static test	
Maximum force exerted through whole range:	24590 lbs *(109.4 kN)*
i) Sustained pressure at compensator cutoff:	3190 psi *(220 bar)*
	three outlet sets combined
ii) Pump delivery rate at minimum pressure and rated engine speed:	49.5 GPM *(187.4 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	44.6 GPM *(169.0 l/min)*
Delivery pressure:	2205 psi *(152 bar)*
Power:	57.4 HP *(42.8 kW)*
	single outlet set
ii) Pump delivery rate at minimum pressure and rated engine speed:	25.3 GPM *(95.6 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	23.8 GPM *(90.1 l/min)*
Delivery pressure:	2510 psi *(173 bar)*
Power:	34.9 HP *(26.0 kW)*

HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	35.8	*910*
B	14.6	*370*
C	19.1	*484*
D	15.9	*405*
E	15.6	*395*
F	13.0	*330*
G	36.4	*925*
H	2.0	*50*
I	16.5	*420*
J	23.4	*595*
K	28.7	*730*
L	52.4	*1330*
M	29.8	*757*
N	42.9	*1090*
O	9.1	*230*
P	50.4	*1280*
Q	38.7	*983*
R	37.0	*940*